BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

WEST Search History

Hide Items | Restore | Clear | Cancel

DATE: Wednesday, June 30, 2004

Hide?	Set Name	Query	Hit Count
		DB=USPT,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR	
☐	L31	l29.clm.	12
☐	L30	l24 and l29	0
☐	L29	(control$7 near3 operating near2 (time or duration) near5 charg$7)	37
☐	L28	(charg$4 near3 control$7) with (rechargeable adj power adj supply)	16
☐	L27	l11 and L24	0
☐	L26	l9 and L24	3
☐	L25	l3 and L24	13
☐	L24	l18 or l19 or l20 or l21 or l22 or l23	2515
☐	L23	324/428.ccls.	89
☐	L22	324/427.ccls.	507
☐	L21	324/426.ccls.	539
☐	L20	713/340.ccls.	441
☐	L19	713/320.ccls.	549
☐	L18	713/300.ccls.	849
☐	L17	((independent or individual or separate or distinct) near5 (rechargeable adj power adj suppl$4))	11
☐	L16	(two near5 (rechargeable adj power adj suppl$4))	5
☐	L15	(computer near5 (rechargeable adj power adj supply))	8
☐	L14	(peripheral near5 (rechargeable adj power adj supply))	3
☐	L13	L12 same charg$7	3
☐	L12	L8 with (control$7 near3 (operating adj (time or duration)))	53
☐	L11	L8 same (control$7 near3 (operating adj (time or duration)))	61
☐	L10	L8 same (control$7 near3 charg$7)	3
☐	L9	L8 same charg$7	46
☐	L8	(determin$4 near3 (operating adj (time or duration)))	764
☐	L7	(determin$4 near3 (operating adj (time or duration)) near3 peripheral)	0
☐	L6	(determin$4 near3 (operating adj (time or duration)) near3 computer)	5
☐	L5	l3 same recharg$7	16
☐	L4	l3 same recharg$4	2
☐	L3	L2 same charg$4	48

☐	L2	L1 same peripheral	1408
☐	L1	(portable adj computer)	20041

END OF SEARCH HISTORY

L26: Entry 1 of 3 File: USPT Oct 26, 1999

DOCUMENT-IDENTIFIER: US 5973497 A
TITLE: Method of determining and displaying battery charge status

Brief Summary Text (25):
If, with a calculated time-based charge status above its predetermined lower limit, the storage battery's terminal voltage drops below the predetermined lower threshold value, this is taken to mean that the storage battery is being loaded momentarily with a higher current, and that the storage battery's charge status has not yet reached the corresponding low-charge point. The falling of the terminal voltage to a value below the predetermined lower threshold value is ignored, therefore, in this case. The charge status indicated on the display thus continues to be the charge status as determined on the basis of the cumulative operating time of the storage battery.

Current US Original Classification (1):
324/428

Current US Cross Reference Classification (1):
324/427

L5: Entry 14 of 16 File: USPT Aug 8, 1995

DOCUMENT-IDENTIFIER: US 5440221 A
**** See image for Certificate of Correction ****
TITLE: Method and apparatus for monitoring batttery capacity with charge control

Brief Summary Text (6):
With the advent of portable electronic systems for personal and business use, rechargeable batteries have seen an increased and widespread use. One problem that has risen with respect to rechargeable batteries has been the length of time that a battery can be used after it has been charged. Although manufacturers rate a battery for a given portable computer or battery operated device as to the number of hours that it will operate, the actual operating time is a function of a number of parameters. For example, personal computers provide a variable load which is a function of the peripheral devices that are activated, such as the screen, the hard disk, etc., such that the operating life of the battery will vary as a function of how often these peripheral devices are used. Power consumption by the peripherals has conventionally been reduced by utilizing increasingly sophisticated power management tools to minimize the amount of power that is drained from the battery, thus extending the operating time of the battery for a given charge. Another problem encountered with rechargeable batteries is partial charging. The manufacturers specifications are directed toward a relatively new battery with a "full" charge. If, for some reason, the battery does not have a full charge, the user has no knowledge of how much operating time he has on a particular battery. Since rechargeable batteries typically have a relatively flat voltage over their charge life, very little warning is typically available as to when the battery is nearing its end of discharge. Further, the condition of a battery, i.e., its age, etc., also effects the amount of charge that can be stored in a given battery. This could result in a fully charged battery driving the battery operated device for a shorter period of time than expected.

L5: Entry 10 of 16 File: USPT Jun 10, 1997

DOCUMENT-IDENTIFIER: US 5638540 A
TITLE: Portable computer/radio power management system

Brief Summary Text (13):
A typical solution to such a problem would be to provide a separate battery or other rechargeable power supply capable of providing to that peripheral a higher power output than that which the battery powered power supply of the portable computer is capable of providing. However, the use of separate batteries for the various peripheral modules on the portable computer increases both the overall size and weight of the portable computer/peripheral combinations. Furthermore, use of a separate secondary battery for the peripheral requires the user to worry about keeping both the main computer battery and the separate peripheral secondary battery charged. Not only must both the primary and the secondary battery remain charged, but separate charging equipment must accompany each battery when the portable computer is taken off-site. Not only must the user contend with the transportation of the extra charging equipment, but the user must also monitor the disparity in the charges of the two batteries. For example, if the peripheral device is used heavily, the battery supplying the power to the peripheral device may require charging earlier than the primary computer battery. As a result, the laptop, although fully charged, may become functionally useless because of the inability of the peripheral device to function properly. Conversely, heavy use of the computer may result in a discharged primary computer battery, thereby rendering the computer non-functional despite a full charge in the secondary peripheral battery.

L5: Entry 7 of 16 File: USPT Jun 15, 1999

DOCUMENT-IDENTIFIER: US 5911529 A
TITLE: Typing power

Brief Summary Text (11):
The currents generated collectively by the keys are provided to a charge pump which multiplies the voltage to achieve a level greater than the voltage level of the battery to be charged. The multiplied voltage is provided to a charging circuitry such as a trickle charger or other types of charging circuitry to recharge the battery. In this manner, the more information entered by the user, the more electricity is generated by the keyboard power generator. The energy provided by the keyboard of the present invention can then be used to lengthen the operating period of the portable computer, or in the alternative, can be used to reduce the size of the primary battery so as to result in a lighter portable computer. Thus, the present invention allows longer operating period between recharge, faster processing speeds, more powerful peripherals, larger screens and other advanced features for portable computers while keeping weight and size down.

Detailed Description Text (14):
Turning now to FIG. 7, a trickle-charge circuit for charging the battery of the present invention is shown in detail. In FIG. 7, the output of the voltage multiplier of FIG. 6 is provided to a diode 280. The output of the diode 280 is provided to a resistor 290. The resistor 290 is further connected to the battery 294 which stores the energy produced by the key strokes for eventual usage by the personal computer 100. In this manner, the more information entered by the user, the more electricity is generated by the keyboard power generator. The energy provided by the keyboard of the present invention can then be used to lengthen the operating period of the portable computer, or alternative, can be used to reduce the size of the primary battery so as to result in a lighter portable computer. Thus, the present invention allows longer operating period between recharge, faster processing speeds, more powerful peripherals, larger screens and other advanced features for portable computers while keeping weight and size down.

Detailed Description Text (16):
In sum, as discussed above, when the magnets mounted on the keys traverse the series of coils mounted on both ends of the magnet during the typing session, voltage outputs are generated at the output ofthe coils. The currents generated collectively by the keys are provided to the charge pump which multiplies the voltage to achieve a level greater than the voltage level of the battery to he charged. The multiplied voltage is provided to a charging circuitry such as a trickle charger to recharge the battery. In this manner, the more information entered by the user, the more electricity is generated by the keyboard power generator. The energy provided by the keyboard of the present invention can be used to lengthen the operating period of the portable computer, or in the alternative, can be used to reduce the size of the primary battery so as to result in a lighter portable computer. Thus, the present invention allows longer operating period between recharge, faster processing speeds, more powerful peripherals, larger screens and other advanced features for portable computers while keeping weight and size down.

L5: Entry 1 of 16 File: USPT Jun 10, 2003

DOCUMENT-IDENTIFIER: US 6577135 B1
TITLE: Battery pack with monitoring function utilizing association with a battery charging system

Brief Summary Text (4):
With the advent of portable electronic systems for personal and business use, rechargeable batteries have seen an increased and widespread use. One problem that has risen with respect to rechargeable batteries has been the length of time that a battery can be used after it has been charged. Although manufacturers rate a battery for a given portable computer or battery operated device as to the number of hours that it will operate, the actual operating time is a function of a number of parameters. For example, personal computers provide a variable load which is a function of the peripheral devices that are activated, such as the screen, the hard disk, etc., such that the operating life of the battery will vary as a function of how often these peripheral devices are used. Power consumption by the peripherals has conventionally been reduced by utilizing increasingly sophisticated power management tools to minimize the amount of power that is drained from the battery, thus extending the operating time of the battery for a given charge. Another problem encountered with rechargeable batteries is partial charging. The manufacturers specifications are directed toward a relatively new battery with a "full" charge. If, for some reason, the battery does not have a full charge, the user has no knowledge of bow much operating time he has on a particular battery. Since rechargeable batteries typically have a relatively flat voltage over their charge life, very little warning is typically available as to when the battery is nearing its end of discharge. Further, the condition of a battery, i.e., its age, etc., also effects the amount of charge that can be stored in a given battery. This could result in a fully charged battery driving the battery operated device for a shorter period of time than expected.

L5: Entry 6 of 16 File: USPT Jul 6, 1999

DOCUMENT-IDENTIFIER: US 5920728 A
TITLE: Dynamic hibernation time in a computer system

Detailed Description Text (33):
Finally, the microcontroller 174 is connected to a keyboard 197 for receiving data entries from the user. The microcontroller 174 is further connected to a DC/DC converter 198 which provides regulated +5 VDC and +12 VDC to the VCC2 plane to power the portable computer 80. The DC/DC converter receives a DC voltage supplied by an AC/DC converter (not shown) which is connected to the AC power at a docking station (not shown). When the portable computer unit 80 is docked with its docking station, it communicates with peripheral devices, receives DC currents for charging batteries plugged into the portable computer 80 and for operating the portable computer unit 80. The DC/DC converter 198 has an enable input driven by the microcontroller 174 such that the microcontroller 174 can turn on or off the DC/DC converter 198. The battery packs 191 and 193 may be a conventional Nicad or Lithium rechargeable battery or they may be consumable, one-time use type of battery. However, as conventional batteries are less predictable with respect to their energy capacity, the battery packs 191 and 193 are preferably smart batteries which offers power management, precise charge control, accurate capacity monitoring and extensive data logging capability, and can communicate battery information to the microcontroller 174 which ultimately communicates such information to the CPU 100.